

## Tools of the Trade

Do you use puzzles to teach and entertain? Frequently I create crossword puzzle reviews or short homework assignments based on the lesson of the day or week. Other teachers who use my puzzles in the same course often ask if I also have a word search puzzle creator. Although I'm not certain what the learning objective is for a word search, one can be useful for keeping quiet students who finish an exam early, and if they contain a hidden message

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or are constructed with clues may serve as review exercises. A good source of programs to create puzzles, including scrambled letter puzzles, fallen phrase, word searches with a hidden message, cryptograms, and more is <http://puzzlemaker.school.discovery.com/>. You select the kind of puzzle you want to create and are completely guided in its construction with instructional forms. Directions are provided if you want to save the puzzle to your own computer or simply print it. I found that I had to print some puzzles in landscape to fit them on my standard paper-A4.

The puzzle creation programs here are very easy to use. They are not individually versatile. For example, the crossword puzzle permits only short clues and does not permit you to customize by adding squares, also the word search lacks opportunity to choose the word direction and check spelling. For spell checking, you could easily create your word list in a word pro-

cessing program, then paste it into the puzzle creation guide. Together the puzzle programs provide an adaptability you may find useful.

For a special occasion, word search fans might want to use <http://www.mastermakers.com/awn/games/word-search/index.htm> for creating a shaped search grid. How about transport words in the shape of a heart?

The puzzlemaker server is operated by <http://school.discovery.com/>. That server provides other useful resources, some quite puzzle-like and as easily used as puzzlemaker. Short quiz templates of several types simplify creation of opening or closing reviews or introductions on a daily lesson. You'll have fun exploring other aspects of the site, but at the moment, I only want to focus on tools of the trade.

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## Software Review

### BIOLOGY CONCEPTS

**Dr. Art – The Singing Scientist: BIO-RHYTHMS I + II (CD).** BIO-RHYTHMS I, 1995. BIO-RHYTHMS II, 1999. Dr. Art – The Singing Scientist, 3900 Connecticut Ave. NW Suite

101F, Washington DC 20008. 1-202-244-1623, [www.biosongs.com](http://www.biosongs.com). Price \$18.95 (\$15.95 + \$3 shipping). Bulk orders: 3 or 4 CDs, \$13.95 each; 5 or more, \$11.95 each; \$3 shipping per order.

**Dr. Art – The Singing Scientist** is actually Dr. Arthur W. Siebens, a biology teacher in the Washington, DC public schools. For many years he has put biological concepts to music and sung the songs for his students. Now these songs are available on a CD-ROM. All of the 15 songs on the CD are written and performed by Dr. Art. A few of the songs are sung to original melodies, but most are familiar tunes such as “Chains,” “La Bamba,” and even “Parigi, o cara” from *La Traviata*. *Bio-Rhythms I* includes songs written primarily for introductory biology students, but they would be useful for AP or college students as a great way to reinforce core concepts. *Bio-Rhythms I* includes the songs: “A Singing Summary of Biotechnology,” “Every Body’s Made From Cells,” “Chains,” “Those Magic Membranes,” “Glucose,” and “Christmas and Biology.” *Bio-Rhythms II* includes: “Enzymes,” “Replication,” “Amino Acids Are Surrendered,” “Wonder Why Operons,” “The Cell Cycle Rap,” “Meiosis All Rapped Up,” “Respiration: What Goes in, What Comes Out,” “Photosynthesis,” and “Do You Know How Much I Miss You?” Although most of the songs in *Bio-rhythms II* are clearly at the AP/college level, “The Cell Cycle Rap” and “Meiosis All Rapped Up” are very appropriate for introductory high school biology students.

Unquestionably, some students find certain biology concepts difficult and sometimes frustrating. Research tells us we should address complex topics from a number of different perspectives designed to reach students’ multiple intelligences. *Bio-Rhythms I + II* are great additions to a teacher’s repertoire of classroom techniques; this CD is educational and

fun! Dr. Art encourages teachers to photocopy the lyrics for distribution to students. With the lyrics in front of them, it is easy to persuade students to listen once and then to sing along. I used the song “Chains” with my introductory biology classes this past year. Reluctant at first to sing along, they were soon having a wonderful time singing about starch, protein, DNA and lipids. The chorus (try it yourself) is easy, and my students got louder each time they sang it.

*Chains – biology is all  
full of chains*

*But they ain’t the kind,  
that you can see.*

*No, to see these chains  
takes electron microscopy.*

The content of the CD is accurate. This is not surprising, given Dr. Sieben’s background. He majored in biology at Oberlin College, earned a Ph.D. in physiology at George Washington University and completed his post-doctoral work at the Yale School of Medicine and NIH. It’s difficult in a song to include all the concepts of complex subjects such as respiration or photosynthesis, but Dr. Art’s lyrics certainly address the most important ideas. In “Meiosis All Wrapped Up,” for example, he reviews the steps of meiosis, the purpose of meiosis, and the key differences between meiosis and mitosis. There is one song that is of questionable use for teachers. “Christmas and Biology” is a spoof Christmas song about human evolution resulting from adaptations to the stress of Christmas. The

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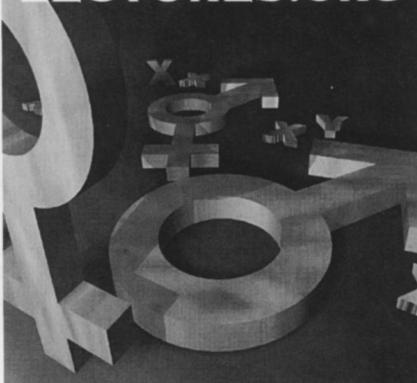
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evolution content is not an issue, but the spoof of Christmas could be controversial.

For any teacher who wants to add some fun to his/her classroom, **Dr. Art - The Singing Scientist** is a wonderful tool to use. The songs can be used as introduction, reinforcement or review. Although some of the tunes might not be as familiar to students, they can easily identify with the rap songs. Some will definitely enjoy writing biology

songs of their own. The final song on *Bio-Rhythms II*, "Do You Know How Much I Miss You," is primarily for teachers, and it is a wonderful expression of the feelings we all have when we are not in school. It provides a fitting ending to a CD that teachers will find extremely useful and enjoyable.

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## Web Site Review

### EVOLUTION

Watch this site!

A PBS seven-part series (8 hours) on evolution will be broadcast in late September. Resources promised include a web library of images and primary source documents, interactive experiences, and a teacher's guide to using the program as part of a high school biology cur-

riculum. As usual, you can tape the shows for classroom use up to one year after they are aired. They will also be available for purchase. You can now sign up for a newsletter and the guide at <http://www.pbs.org/evolution>.

Rachel Hays  
Web Site Editor

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